

**GLOBAL MODELS FOR  
FUNDING HOUSING:  
WHAT IS THE BEST MODEL  
FOR POLAND?**

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## ABSTRACT

Polish housing finance has progressed considerably in recent years. As recently as 1996, the entire country had only four lenders and 653 million zloty of market rate mortgages. By mid 1999, over thirty lenders were active in the housing finance market, with over 3.9 billion zloty of market rate mortgages outstanding.

This paper was developed for the Final Conference of USAID's Poland Housing Finance Project, *A Decade of Building Housing Finance in Poland: Challenges at the Outset of the New Century*. The Conference, jointly sponsored by USAID and the Polish Banks Association, was held on December 8 and 9, 1999 in Warsaw. The goal of the conference was to briefly review the progress that has been made in the housing finance sector during the previous decade and to explore the sector's future development.

To date, all mortgage lending in Poland has been done by commercial banks. A lively debate regarding the introduction of alternative models for the provision of housing finance has emerged. Legislation authorizing creation of specialized mortgage banks and contract savings institutions (Bausparkassen) was passed in 1997. Two mortgage bank licenses have been granted recently, but there has been no lending activity to date. In addition, there has been discussion about securitization and an on-going role for the Mortgage Fund, a second tier refinance facility created in 1994.

What should be the appropriate model for accessing funds for housing is a question not unique to Poland. Historically, many countries have created specialized institutions and special circuits for the funding of housing. Although such special circuits have been replaced in many countries, they are still important in several countries and continue to be introduced in both developing and transforming market contexts.

This paper reviews the four major models for funding housing that are being discussed in Poland today: the universal banking model, the mortgage bank model, the contract savings model and the secondary mortgage market model. The review briefly describes each model, notes its strengths and weaknesses, and characterizes its relative importance in developed country housing finance. The paper concludes with a view as to the likely evolution of housing finance in Poland in the early 21st century.

# GLOBAL MODELS FOR FUNDING HOUSING: WHAT IS THE BEST MODEL FOR POLAND?<sup>1</sup>

## Introduction

Polish housing finance has progressed considerably in recent years, as detailed in the companion paper for this conference.<sup>2</sup> As recently as 1996, the entire country had only four lenders and 653 million zloty of market rate mortgages. By mid 1999, over thirty lenders were active in the housing finance market, with over 3.9 billion zloty of market rate mortgages outstanding.

The growth potential of the Polish mortgage market remains considerable. In Europe, for example, the size mortgage markets relative to national economy ranges between seven percent and sixty percent (Table 1). The estimated size of Poland's mortgage market at the end of 1998 (8.3 billion zloty) was only 1.6 percent of GDP.<sup>3</sup>

**Table 1**  
**1998 European Residential Mortgage Market Size**

Country	Mortgage Debt Outstanding	Mortgage Debt/GDP (1997) (in percent)	1996-1997 Growth Rate (in percent)	1997-1998 Growth Rate (in percent)	5 Year Average Growth Rate (in percent)	Mortgage Debt 2004
Belgium	55,528	22.20	9.00	11.90	10.00	89,428
Germany	1,012,998	50.90	5.30	7.40	8.00	1,488,426
Spain	122,637	22.00	18.70	18.20	15.00	246,667
France	262,121	20.40	2.00	4.40	5.00	334,540
Ireland	20,888	26.00	15.90	19.00	15.00	42,013
Italy	87,555	7.30	4.50	17.30	15.00	176,104
Netherlands	220,537	60.10	13.60	15.30	10.00	355,177
Portugal	23,337	26.30	22.30	N/A	15.00	46,939
Finland	33,765	29.50	2.00	8.20	5.00	43,094
Sweden	100,946	57.30	-4.60	-6.20	1.00	106,095
UK	646,735	57.00	16.70	10.00	10.00	1,041,573
Others	181,849				5.00	232,091
Total (Euro)	2,768,896					4,202,148
Total (\$)	3,211,919					4,454,277
E/\$	1.16					1.06

Source: European Mortgage Federation

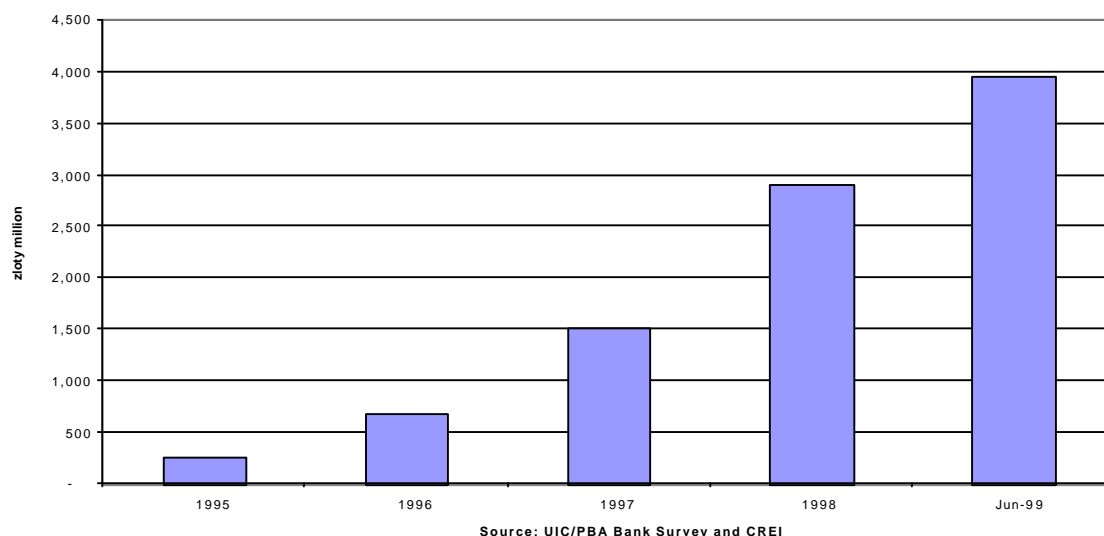
<sup>1</sup> Helpful comments were received from Michael Lee and Bertrand Renaud.

<sup>2</sup> S. Merrill, E. Kozłowski, P. Karas and J. Laszek, "Polish Housing Finance at the Millennium: An Assessment of Achievements and Outstanding Issues"

<sup>3</sup> At the end of 1998, PKO BP had a residential loan portfolio of 7.34 billion zloty with a subsidized old portfolio of 5.36 billion zloty. The estimate of 8.3 billion zloty of mortgages outstanding is based on an estimate of 2.9 billion zloty market rate mortgages outstanding at the end of 1998 from Merrill et. al. and the old portfolio outstanding amount.

The Polish growth rate has been impressive in recent years (Figure 1), albeit from a very small base, and is likely to remain high as interest rates fall to European Union levels. The Spanish experience may be indicative. The Spanish mortgage market grew by over 5 percentage points relative to GDP in the 1990s as interest rates came down, from over 16 percent in 1990 to under 6 percent today. Similar growth in Poland yields a mortgage portfolio in excess of 55 billion zloty in 5 years.

**Figure 1: Market Rate Mortgage Debt Outstanding**



All mortgage loans in Poland to-date have been provided by universal commercial banking institutions. The market is still dominated by the state savings bank, PKO-BP, with a market share of unsubsidized credit in excess of 63 percent in 1998. The portfolios of new entrants are growing at a faster rate than that of PKO-BP.

Debate regarding the introduction of alternative models for the provision of housing finance in Poland is lively. Legislation authorizing creation of specialized mortgage banks and contract savings institutions (*Bausparkassen*) was passed in 1997. So far, only one mortgage bank license has been granted and there has been no lending activity. During the past year there has been discussion about turning the Mortgage Fund created in 1994 to refinance bank dual-index mortgage loans (DIMs) into a second tier lending and bond issuing institution.

What should be the appropriate model for accessing funds for housing is a question not unique to Poland. Historically, many countries have created specialized



institutions and special circuits for the funding of housing.<sup>4</sup> Although such special circuits have been replaced in many countries, they are still important in several countries and continue to be introduced in both developing and transforming market contexts.

This paper reviews the major models for funding housing that are being discussed in Poland today. The review briefly describes each model, notes its strengths and weaknesses, and characterizes its relative importance in developed country housing finance. The paper concludes with a view as to the likely evolution of housing finance in Poland in the early 21st century.

### ***Institutional Models for Housing Finance***

In discussions of housing finance, the funding sources are often the major issue. In developed economies, most finance for housing comes from voluntary savings. In some developing economies, housing finance may be provided through mandated savings.<sup>5</sup> Very few countries still attempt to finance housing primarily through state resources (i.e., taxes).<sup>6</sup>

■ **Sources:** Voluntary savings available for housing come from three main sources.<sup>7</sup> Deposits in banks and savings institutions are the traditional and still an important source of finance for housing. A second source is loan-linked savings contracts—so-called contract savings for housing systems. This source is mainly found in Austria, France, and Germany. The third major source is long-term contractual savings plans in the form of life insurance and pension schemes. This is the fastest growing form of savings in recent years, due in part to increased emphasis on expanding privately funded pensions.

■ **Instruments:** The simplest instrument to tap these funds is the savings deposit, which can come with different terms and restrictions. Bonds are also important. Bond instruments can either be secured by mortgage loans or unsecured obligations of the

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<sup>4</sup> A special circuit is characterized by specialized lenders supported by financial and regulatory incentives. This model has been applied to both developed and developing countries. In the US, savings and loans were the principal component of a special circuit that dominated the housing finance system through the early 1980s. In the UK, the building societies were a government sanctioned special circuit until the early 1980s. Contract savings systems are another form of special circuit. For a discussion of their use in the US and selected European countries, see Diamond, D. and M. Lea [1992b].

<sup>5</sup> A common model in Latin America is a housing fund financed through payroll deductions. INFONAVIT, the largest lender in Mexico, is one example of such a fund.

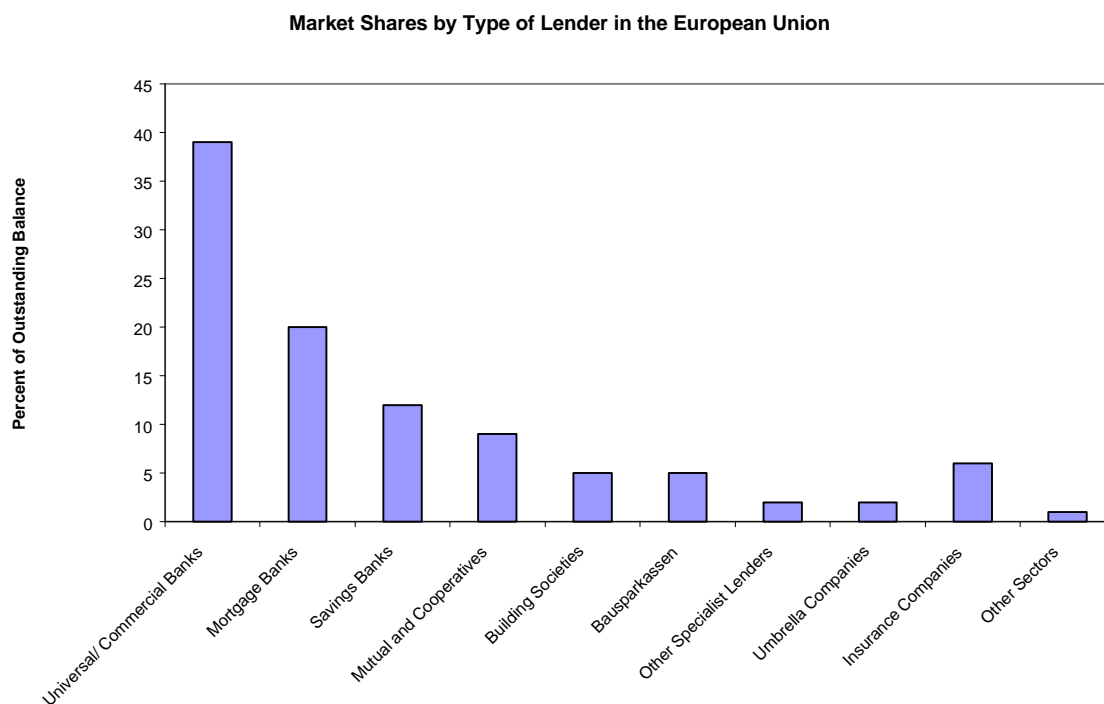
<sup>6</sup> This was a hallmark of centrally planned economies. A variant of this model is one where state-owned enterprises are required to provide housing for their workers. China has traditionally used this model but it is being replaced by the wage tax model and private bank finance.

<sup>7</sup> In the US and several European countries, mutual funds or unit trusts are becoming an important vehicle for voluntary savings. Also, a large portion of savings is invested in equity markets, either directly or through mutual funds or pension schemes.

issuing institution. The most recently introduced instrument is the pass-through security that passes the cash flows and mortgage loan risks through to the investor.<sup>8</sup>

■ **Lenders:** The most common lenders are depository institutions, which attract deposits and make home loans. These institutions may be diversified (such as commercial or savings banks), or specialized in housing (such as building societies and housing banks). Contract savings institutions like the *Bausparkassen* in Austria and Germany are a type of specialized depository. Mortgage banks raise funds almost exclusively by issuing secured bonds. Life insurance companies may lend the premiums they accumulate directly for housing as well. The market shares of the different types of institution in Europe at the end of 1998 are shown in Figure 2. All are portfolio lenders in that they hold the loans on balance sheet and are engaged in most if not all the primary functions of housing finance: origination, servicing, risk management, and funding.

**Figure 2: European Mortgage Market Shares**



Source: European Mortgage Federation

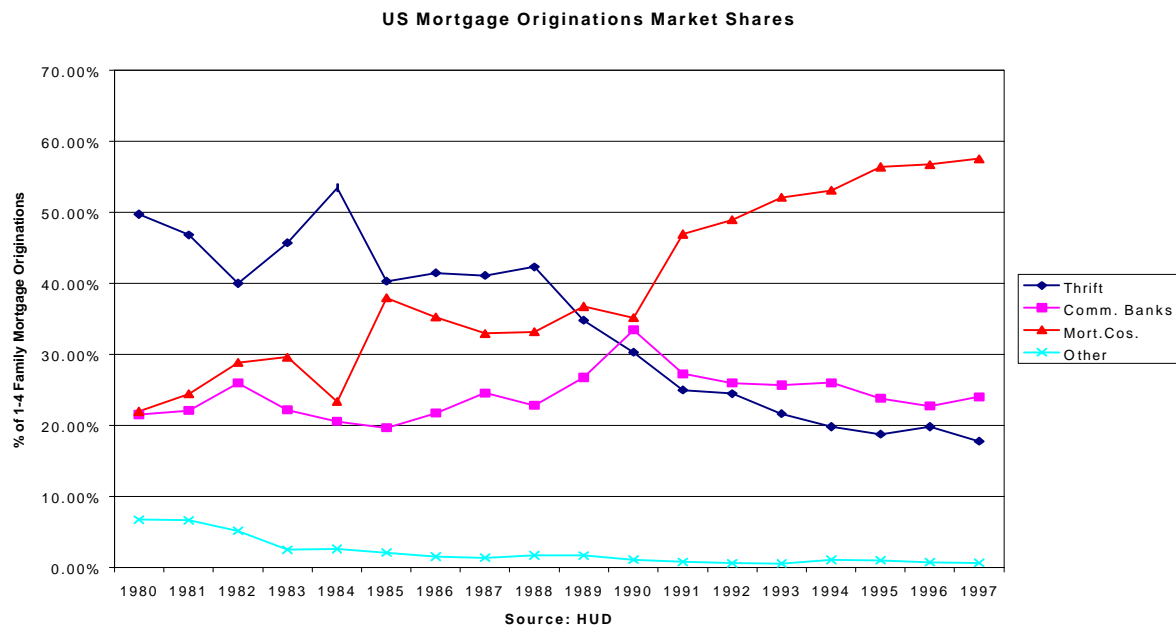
Lending institutions may also raise funds by selling the loans they originate, either to other institutions or directly to investors, in whole loan or securitized form. Selling a loan separates the origination and servicing functions from the funding and some or all of the risk management. In Australia, the US, and the UK, specialized

<sup>8</sup> The characteristics of bonds and mortgage-backed securities are discussed below.



mortgage companies fund all their loans through sale or securitization. As shown in Figure 3, mortgage companies now provide about 60 percent of mortgage originations in the US.

**Figure 3: US Mortgage Market Shares**



Second-tier institutions are also involved in raising funds for housing in many countries. Specialized institutions known as conduits purchase loans from a number of lenders and issue mortgage pass-through securities. Other specialized institutions known as liquidity facilities provide loans to portfolio lenders funded through issuance of unsecured debt.

Sources of funds are linked with providers of funds through a variety of models. This paper considers four major models:

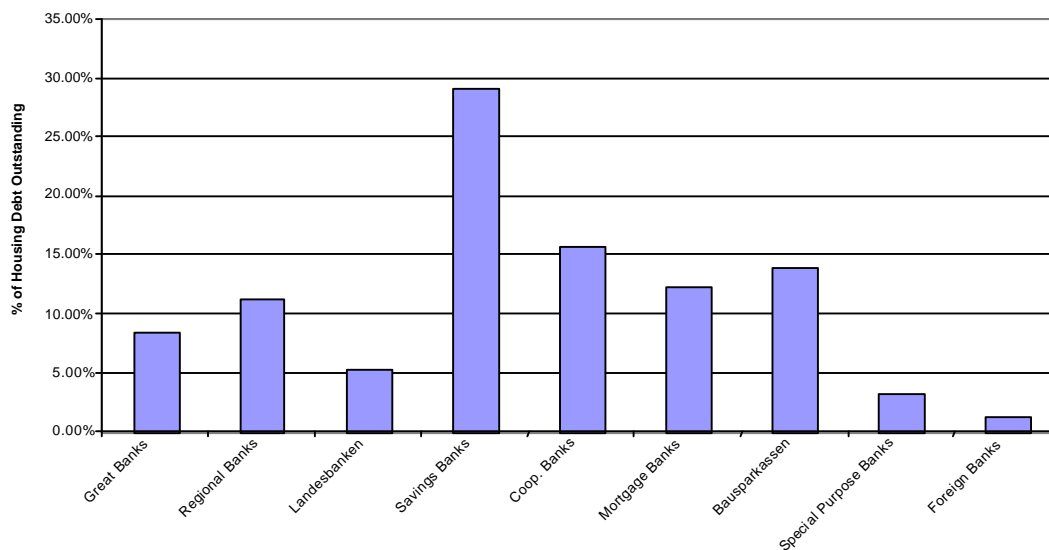
- *Commercial Bank Model*: Deposit-financed, diversified portfolio lenders
- *Mortgage Bank Model*: Bond-financed, specialized portfolio lenders
- *Contract Savings Model*: Specialized institutions offering subsidized, loan-linked savings contracts
- *Secondary Market Model*: Second-tier institution lending to or purchasing loans from primary lenders

## Commercial Bank Model

Commercial banks have not historically been major providers of housing finance in part because they had no retail orientation and in part because they were concerned about the liquidity risk inherent in funding long-term loans with short-term deposits. Their focus rather has been on financing business and maintenance of the payments system.

Recently, however, banks have become major if not dominant providers of housing finance in a number of countries. In the UK, for example, banks increased their market share of both loans outstanding and new originations (gross advances) from thirty percent in the early 1990s to seventy percent in 1998, due primarily to the conversion of building societies to commercial banks. A similar phenomenon has taken place in Australia and South Africa. The market share of banks has risen in France and Spain as a result of deregulation and reduction in preferences accorded to mortgage banks. In Germany, three types of deposit-taking banks dominate the residential mortgage market: state-owned savings banks, mutual cooperative banks, and large and regional commercial banks. These three types of institutions together account for over sixty-three percent of housing loans outstanding (Figure 3).<sup>9</sup>

**Figure 3: German Residential Lending Market Shares: 1998**



Source: Deutsche Bundesbank

<sup>9</sup> Germany's largest mortgage lender, Hypovereinsbank, has a special charter that allows it to issue Pfandbriefe (i.e., a mortgage bank) and take deposits. It is classified here as a regional bank and has a market share of approximately 7 percent.



The increased interest in housing finance by banks reflects two major developments. The first is a loss of traditional business (e.g., a reduction in business finance due to development of the commercial paper and corporate bond markets) and a resultant shift to a more retail orientation. Housing loans are now viewed as attractive assets in most developed countries, because of their low risk and the perceived ability to cross-sell a variety of financial products to long-term borrowers. The Bank for International Settlements risk-based capital guidelines accord residential mortgage loans a 50 percent capital risk weight, which further increases their attractiveness. The ability of banks to manage funding risk has also improved through the development of bond markets and more sophisticated risk management technologies.

The second development leading to the increase in market share of commercial banks in housing loans is the declining significance of specialized depository institutions like building societies. One factor in their decline is demutualization. Mutual building societies in the UK and its former colonies have converted to shareholder-owned banks in order to raise additional capital and wholesale funds. After demutualization, these institutions have been merged into commercial banks and slowly diversified away from housing. The passage of a new banking law in the US in November 1999 that eliminates regulatory barriers between banking and provision of other financial services underscores the global trend away from specialization.

It should also be noted that the importance of commercial banks in housing finance is understated in the official data of some countries. In the US, most of the large mortgage companies are owned by commercial banks. In Germany, both commercial and savings banks own or control specialized lenders such as mortgage banks and *Bausparkassen*.

In many countries, commercial banks and depository institutions enjoy a funding advantage over institutions that fund themselves primarily or exclusively from the capital markets. The marginal cost of retail funding has been less than wholesale (capital market) funding, because the rates offered to depositors are significantly lower than those paid to investors in bonds and mortgage-backed securities. The retail advantage no longer exists in the US, however, and has been substantially eroded in the UK. Cross-border competition for savings in Euroland will erode this advantage in continental Europe as well.

■ **Strengths:** The banking model has several advantages for funding housing. All countries have banks already eliminating the need to create or support a new type of institution. Commercial banks have several structural advantages over specialized lenders as well. Because a majority of their assets are outside the real estate sector, they may have a better diversification of risk. In countries with bond markets, banks can

also issue bonds to diversify and lengthen their funding term. Finally, a bank with a variety of products has the ability too cross-sell its customers.

■ **Weaknesses:** The bank model also has several disadvantages as a mechanism for funding housing. First, it lacks focus on housing finance, which may result in less effective marketing and risk management. Second, a reliance on retail deposits may limit the type of product banks offer and the proportion of assets they hold in the form of housing loans. Third, banks prefer variable rate loans in order to minimize interest rate risk. Instruments that transfer the risk to the borrower. Banks may limit the percentage of their assets in the form of housing loans to manage their liquidity risk. Finally, because they are diversified financial institutions, banks may be “fair weather” lenders, lending when market conditions are favorable and leaving the market when conditions become less favorable.<sup>10</sup>

■ **Situation in Poland:** As described in the companion paper, *Poland: Housing Finance at the Millenium*, the banking system in Poland is strong and competitive and has recently shown considerable interest in the funding of housing. However, housing loans still make up a small percentage of bank assets (only 1 percent if PKO BP is excluded). Their volume of housing lending has increased rapidly in recent years (by as much as 51.6 percent in real terms according to the National Bank of Poland [1998]) and this growth is likely to continue as the economy expands and stabilizes. One factor limiting growth, however, is the concern over the perceived liquidity risk of housing loans. The funding base of the banking system is almost entirely short-term and the banks may limit their portfolio growth as a way to limit risk. It is for this reason that banks are very interested in the development of a bond market. The loans they offer will continue to be variable rate and the percentage of assets in the form of housing loans is likely to exceed 10 percent in the foreseeable future.<sup>11</sup>

### ***Contract Savings Model***

At the other end of the spectrum of financial institutions are Contract Savings for Housing (CSH) systems. These involve highly specialized institutions or funds that provide only housing finance funded from loan-linked savings deposits. CSH systems derive from early U.K. experience with mutual forms of housing finance.<sup>12</sup> They involve a contract on the part of a household to save an agreed amount over a prescribed period in return for a commitment on the part of a financial institution to provide a loan, at pre-specified terms, for the purchase or renovation of owner-occupied housing. CSH systems are typically characterized by fixed, below-market rates on savings and

<sup>10</sup> However, their ability to time the market is suspect. Real estate lending has played a major role in banking crises in Europe, Japan and the US. See Lea, M. [1999].

<sup>11</sup> Commercial banks in developed countries hold between 20 and 40 percent of assets in the form of mortgages.

<sup>12</sup> For a detailed discussion see Lea, M. and L. Chiquier, “Analysis of Contract Savings Systems in



subsequent loans. In their modern form, governments subsidize savings accumulation with lump sum grants (bonuses) and/or tax relief. CSH contracts may be offered by specialized institutions (e.g., *Bausparkassen* in Austria and Germany) or through the banking system (e.g., France).

Any CSH system has four major components to: savings contract, loan, subsidy and delivery mechanism.

■ **Savings:** In CSH systems, a household and a financial institution conclude a contract, wherein the household agrees to save a sum (this can be monthly, annually, or a total over the life of the contract) over a certain period of time (the contract may specify minimum and maximum savings periods) at pre-specified terms (the interest rate is typically but does not have to be fixed, and “always” or “typically” below market). Use of the funds may be constrained (e.g., only for pre-defined housing purposes) or unconstrained (i.e., the household may be able to withdraw the funds after completion of the savings contract for any purpose without penalty). Heavy penalties for early withdrawal of funds before completion of the contract, including loss of the subsidy, are typical.

■ **Loan:** Once the household has satisfied the savings contract, it is entitled to a loan, also on pre-specified terms (i.e., rate, spread over savings rate, term). The size of the loan is based on a multiplier concept—for example, a multiple of the savings sum including interest and subsidy (up to 1.5 times in Germany) or the interest earned on the savings contract (1.5 to 2.5 times in France).

In both the French and German systems, the household is entitled to the loan upon satisfactory completion of the savings contract. For French households, the entitlement is immediate, for German households there is a waiting period that depends on the availability of funds. In both cases, the granting of the loan is not subject to normal credit underwriting. From a financial perspective, the ability of the saver to obtain a loan upon completion of the savings contract introduces an option component to the contract. The household has the right, but not the obligation, to call a loan at pre-specified terms from the financial institution. This option may be valuable to the household both because the loan is typically at a below-market rate and because the household does not have to go through an underwriting process to receive the loan proceeds.

■ **Subsidy:** In a formal financial system under which households have both savings and loan options, there would be no need or demand for a CSH system as households could save and borrow at market rates. What makes the CSH option attractive is the subsidy the government provides for the savings. This subsidy attempts to bring the effective rate on the savings up to (or above) the market interest rate on savings which makes the package financially attractive to the household: they can save

at market rates on a competitive after tax/subsidy basis and then receive a loan at a below-market interest.

Subsidies take the form of either favorable tax treatment and/or a lump sum grant, favorable tax treatment can be deductibility of interest earned or savings made from taxable income or a tax credit for the same. Typically in the form of a bonus paid to the household. Payment can be made on an annual basis (e.g., a fraction of the new savings for the year) or upon successful completion of the contract (i.e., at the end of the savings period or when the loan is granted).

The dependence of CSH systems on subsidies means that such systems are an integral part of national housing policy and have significant impact on state budgets. It also interjects political risk into the system. At its heart, CSH is a mutual system where members of the collective help each other obtain loans. This means that the system depends on a continued influx of new savers to provide the funds to satisfy the loan commitments made to earlier savers (who have satisfied the contract). Changing the level of subsidy becomes a particularly tricky issue, because it can have major implications on the flow of new savings and the ability of the system to provide loans.<sup>13</sup>

■ **Delivery mechanism:** Contracts can be offered through either “closed” or “open” means. A closed system adheres strictly to principles of mutuality and transparency. Germany has a closed system in which, CSH deposits are mobilized by a specialized institution, the *Bausparkasse*. These funds are only available to make housing loans to participants.<sup>14</sup> In case available funds are not adequate to meet current CSH loan demand, participants are served according to well-defined queuing rules. This closed special circuit is substantially (although not totally) isolated from the capital markets.

The original French system was also closed. It was modified by 1970 into an “open” system wherein universal banking institutions offer the savings and loan contracts. The purpose of opening the system was to create a tranche of savers who would be willing to leave their savings in the CSH system without exercising their loan rights, because they found the yield on their savings attractive. The “free funds” so generated could be used by deposit institutions to fund other types of housing loans or invest in mortgage bonds.

■ **Strengths:** A key strength of the contract savings system is its ability to create a pool of long-term funds dedicated to housing. In many developing and transition economies, such funds are lacking—leading to either a lack of mortgage lending or

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<sup>13</sup> Subsidies have been gradually reduced in both France and Germany over the years without fundamentally reducing the popularity of the systems. However, on occasion they have been raised to ensure stability. A reduction of the subsidy in Slovakia in 1998 led to a sharp reduction in the volume of new savings. See Diamond, D. [1998].

<sup>14</sup> The *Bausparkasse* offer bridge or interim loans at market rates of interest as well as contract loans.



provisions of less affordable short-term mortgages. Unlike commercial banks, CSH institutions are not “fair weather” lenders. As housing loans are the only type they can make, they provide such loans as long as there is a sufficient flow of new savings. The guarantee of a loan at completion of the savings contract provides an incentive for savings and may somewhat increase the aggregate savings rate.

CSH requires successful completion of a reasonably long period of steady payments towards a housing goal, thereby promoting and confirming the creditworthiness of the borrower. By making regular payments over a period of time, a participant signals a lower credit risk as a borrower. Also, the state subsidy helps the borrower build a larger downpayment, which reduces the risks to lenders of a conventional loan. Moreover, the CSH loan itself takes second rank to a larger and longer-term loan from a mortgage bank or other source, thus supporting the traditional mortgage bond structure based on first mortgages with low loan-to-value (LTV) ratios. Although CSH provides the lender with information about the creditworthiness of the saver, the value of this benefit has been diminished in modern financial systems with the development of credit bureaus and credit scoring.

■ **Weaknesses:** Among the weaknesses of CSH systems, they require the creation of new types of financial structures with accompanying regulation. More importantly, they are dependent on a government subsidy. In the Czech Republic and Slovakia, where they were introduced in 1993 and 1992, respectively, the CSH systems have absorbed between 1 percent and 1.5 percent of the government budget [Diamond, 1998]. To date they have provided little in the way of new housing loans, in part because of the savings and waiting periods inherent in the system. As discussed by Diamond there is little evidence that either they have provided or will provide incremental funds for housing. The evidence to date is that households merely shift savings from other sources in order to obtain the subsidy and then use the loan proceeds for construction or improvements they would have undertaken without the subsidy.

■ **Situation in Poland:** In 1997, the *Sejm* passed an act providing the legal basis to establish contract savings for housing (CSH) institutions modeled after the German *Bausparkassen*. This is the second CSH system introduced into Poland. The first (*kasy mieszkaniowe*) was created with an Act passed in October 1995 and is in operation today. The details of these two systems are discussed in Lea, Chiquier and Laszek [1998].

The *kasy mieszkaniowe* system has achieved only modest results. According to the National Housing Fund, which monitors the liquidity of the system, there were about 580 million zloty in savings as of March 31, 1999. The program relies on a tax deduction for its subsidy, which restricts eligibility to those households that pay a meaningful amount of tax. There has also been considerable uncertainty over whether it will continue, which may also have reduced the volume of new savings contracts. The

*Bausparkassen* system has never been implemented, and there is currently a proposal to modify the *kasy mieszkaniowe* (in particular to replace the tax subsidy with a lump sum grant) and repeal the *Bausparkassen* system.

A CSH system has some appeal in countries in which there are no formal financial sector housing lenders or long-term savings available for housing. This was the case after World War II in Austria and Germany. It is of questionable public policy value in Poland today. Commercial banks now normally provide mortgage credit and the recent authorization of private pension schemes will create a pool of private pension funds. There is also already a sizeable insurance industry in Poland with deposits at the end of the first half of 1999 of 21.2 billion PLN – 50 percent more than the same period of last year.

Another way to look at CSH is not as a housing finance system, but as a housing subsidy system. An advantage of a CSH system is its ability to leverage private savings for housing. A major disadvantage is that the subsidy is not targeted, either by income or housing need. It can also be excessively costly if it rewards non-borrowing households (i.e., those who leave their funds in for a certain period of time and withdraw them without taking a housing loan thus retaining the subsidy).

### ***Mortgage Bank Model***

The mortgage bond system developed in Europe in two fundamentally different phases [Pleyer and Bellinger [1981]. The first was in Poland, based on creation in 1770 of the Silesian “*Landschaften*”, a type of cooperative rural mortgage bank. The second was in France, based on creation of the *Credit Foncier de France* (CFF) in 1852. This paper focuses on the former, which is the basis of the mortgage bank legislation recently passed in Poland.<sup>15</sup>

The fundamental concept underlying the Silesian model mortgage bond system is reliance on the *collateral* as the fundamental source of credit quality. The bonds are obligations of the mortgage bank, which thus provides credit enhancement. The credit quality of the bonds is assured through conservative underwriting standards and strict regulation of loans and lending institutions. In the countries using this system, government laws create *specialized* institutions whose main activity is the granting of real estate loans. As a rule, they grant loans secured by first mortgages and obtain funds only through issuance of mortgage bonds, which they have the *exclusive* right to issue. Bondholders have priority claim on the pool of collateral, strong protection in the event of bankruptcy as well as protection from the capital of the issuing institution.

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<sup>15</sup> In both France and Spain, mortgage banks were backed by the government and had a monopoly on the issuance of certain types of subsidized loans. The Banco Hipotecario of Spain was merged into the Argentario commercial bank which was substantially privatized in 1997 and the Credit Foncier was merged with the savings banks in 1999. These institutions no longer have monopolies on either mortgage bond issuance or subsidized lending.



There are typically *restrictions* on lending limits (i.e., loan-to-value ratios), loan characteristics, institutional capital, bond circulation limits, and the balances between borrowing and lending.

The government strictly controls mortgage bond issuance in these countries. The characteristics of mortgage collateral supporting the bonds are stipulated by law and overseen by government regulation and, in the case of Germany, by bondholder trustees. The bonds rely on the quality of the collateral and the issuing institution for their value; there is no special tax treatment or regulatory preference.<sup>16</sup> Bondholders are given preferential rights to the collateral in the event of institution failure. In Germany, regulations restrict the right to use the name Pfandbrief, which is a symbol of high quality in the market. As evidence of their high quality, Pfandbriefe issued by the private mortgage banks trade at very tight spreads (20 to 40 basis points) relative to comparable maturity government bonds. As of March 1998, there were over DM 422 billion in mortgage Pfandbriefe outstanding [Arndt, 1998].

German mortgage bonds are issued against a large pool of collateral held by the mortgage bank ("the cover"). Although the banks can grant mortgage loans up to one-hundred percent LTV, only the portion of the loan at or below sixty percent LTV is eligible collateral for the Pfandbrief. The proportion of mortgage assets over the sixty percent ceiling is limited to fifteen percent. The mortgage bank can issue non-Pfandbrief mortgage bonds to fund the remainder of the collateral. These bonds are mostly simple non-callable bullet instruments. There is a small degree of over collateralization (average 5 percent) reflecting the funding of amortizing mortgages with bullet debt. The mortgages are amortizing but prepayment is excluded for the period over which the interest rate is fixed.<sup>17</sup> Thus, the mortgage bank can match fund the loans with minimal cash flow risk.

German mortgage banks are portfolio lenders with the assets remaining on balance sheet. There are twenty-five pure mortgage banks with a market share of thirteen percent and three mixed mortgage banks with a market share of seven percent.<sup>18</sup> Most of the pure mortgage banks are owned by commercial banks. The mortgage banks have lost residential mortgage market share over the last decade to the savings and large commercial banks. However, they remain the largest lenders to state and local governments and for commercial real estate.

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<sup>16</sup> During the early 1950s in an effort to rebuild the market after the war, interest on Pfandbriefe was tax exempt. The bonds issued by the Landesbanken are guaranteed by the Länder (state) governments and thus implicitly by the federal government.

<sup>17</sup> The exclusion contract is under pressure from courts and consumer groups in Germany. The Supreme Court recently ruled that the mortgage bank must allow early repayment in the event of a household move (the loans are assumable). As discussed in Dübel Lea, and Welter and [1997], this contract is likely to be replaced with a prepayable loan subject to a penalty.

<sup>18</sup> A mixed mortgage bank is a commercial bank that can issue Pfandbriefe. These institutions pre-date the current mortgage bank act and no new mixed mortgage bank charters are being granted.

In Denmark and Sweden private mortgage banks are the dominant lenders.<sup>19</sup> Prior to the 1980s, these institutions were part of a directed credit system in which institutional investors were obliged to purchase mortgage bonds, in the case of Sweden at below market rates. The directed credit systems were substantially dismantled during the 1980s. Also in the past, many European pension funds and insurance companies were subject to constraints on portfolio allocation leading them to favor mortgage bonds. These restrictions are being lifted in accordance with EC Directives.

In Denmark, a mortgage bond system has been in operation almost as long as in Germany—with the first bonds issued in 1797. The mortgage market is almost entirely funded through issuance of mortgage bonds. The Danish bond market is one of the largest and most liquid in the world, with a volume of bonds in circulation of 1.9 trillion Kroner (ninety-five percent of Danish GNP in 1998), sixty percent of which is mortgage bonds and only thirty-four percent government bonds.

Mortgage bond issuance in Denmark is tightly regulated. Only authorized mortgage credit institutions can issue mortgage bonds ("Realkreditobligationer"). There are nine authorized issuers with three institutions accounting for seventy-five percent of the origination market in 1998. These mortgage credit institutions are subject to strict limits over the characteristics of the loans that collateralize their bond issues and the matching of their assets and liabilities. Unlike German mortgage bonds, which are simple bullet bond structures, Danish mortgage bonds are pass-through securities. The mortgage bank securitizes the borrower's loan by selling a matched bond in the capital market. The loan is funded with the proceeds of the bond issuance. The individual bonds are part of large series with a particular coupon rate that can remain open for several years. The mortgage bank also provides credit enhancement, in that the bond is an obligation of the bank (which has recourse to the house pledged by the borrower).

In Sweden, the volume of mortgage bonds outstanding stood at SEK 657 billion at the end of 1998, constituting about forty percent of the total bond market. Property financing is dominated by five large specialized mortgage credit institutions; banks own four of these institutions, the government owns the fifth. Unlike Denmark and Germany, Sweden has no special legal and regulatory protections afforded to mortgage bond investors. There is no pooling of assets; thus the total assets of the issuing institution secure the payments to investors.

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<sup>19</sup> Mortgage bonds issued by mortgage banks were also used to fund housing in Holland and Italy. In Holland the mortgage banks ran into liquidity difficulties in 1982 and were merged with commercial banks or insurance companies. In Italy, specialized banks were eliminated in 1995 and the mortgage banks were merged with commercial banks. The National Bank of Greece also issues mortgage bonds. The only non-European country in which a substantial portion of the mortgage market is funded through bonds is Chile. The issuers are mainly commercial banks.



The Silesian model is not the only mortgage bond issuance model in Europe. In some countries (e.g., Spain), mortgage bonds are issued by commercial banks. In France, a new law passed in June 1999 allows for creation of special-purpose entities called *sociétés de crédit foncier*, which are wholly owned subsidiaries of banks and other financial institutions.<sup>20</sup> The activities of these institutions will be limited to the origination and purchase of mortgage and local authority debt and they will have sole authority to issue *obligations foncières* (secured bonds). The characteristics of the loans and bonds are similar to those of the Pfandbrief but the entity can be virtual (i.e., non-operating). Thus a bank can create a *société* to issue *obligations foncières* with no employees or operating functions. The bank would transfer capital and loans to the *société*, whose sole purpose would be to issue the debt. The origination and servicing of the loans would remain with the bank. In this way, the costs of setting up and running a separate institution are reduced. In October 1999, eight billion Euro of *obligations foncières* were issued.

Why create a specialized mortgage bank to raise funds for housing? In both Denmark and Germany, mortgage banks were the first major mortgage lenders. They were created to meet a market demand, particularly in Denmark where one-quarter of the city of Copenhagen was destroyed in a fire in 1795. The feasibility of these institutions was enhanced by the existence of relatively well-developed property registration systems and the presence of institutional investors (insurance companies). Today the argument is made that specialized institutions have lower risk and thus can issue bonds that are more attractive to investors than commercial banks.

■ **Strengths:** Mortgage bank systems are structured to give investors confidence that the bonds and the institutions that issue them represent very low risk. Specialized institutions may be viewed as lower risk because of their transparency. The strict and very conservative legal and regulatory structures governing the institutions and the bonds also improve investor confidence.<sup>21</sup> It is noteworthy that this instrument has achieved its prominence in funding housing in these countries without any explicit government guarantee. A sign of the safety of the collateral and the effectiveness of the legal and regulatory infrastructure is that there have been no mortgage bond defaults in either country during the entire 20th century.

European mortgage bonds are almost entirely long term fixed rate instruments. In Sweden, the preponderance of bonds have a maturity of one to five years but they can be as long as fifteen years. In Germany, most bonds have maturities of one to ten years, although there are some longer term maturities as well.<sup>22</sup> In Denmark, the bond

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<sup>20</sup> See Moodys [1999] for a discussion of mortgage bond structures in Europe.

<sup>21</sup> In addition to regulation of the collateral characteristics, mortgage banks are subject to requirements to match fund their mortgage portfolios and minimize interest rate risk.

<sup>22</sup> In Germany and Sweden the mortgage maturity is typically longer than the bond maturity. In Germany the mortgage loan has a maturity of 25-30 years but the rate can be fixed for a maximum of 10 years. The mortgage bank will issue matching maturity debt to fund the loan during its fixed rate period.

maturities are either twenty or thirty years. The ability to issue long-term, fixed rate instruments is dependent on the existence of institutional investors with an appetite for long-term assets.

As specialist institutions, mortgage banks have the advantage of a clear focus. This may make them more effective in their marketing and risk management, as they may know their markets and risks better than non-specialized institutions. The mortgage bond instrument can be an effective way to tap into long-term sources of funds — enabling the issuers to provide both long-term and, in relatively stable economies, fixed rate mortgages.

■ **Weaknesses:** Mortgage bond systems have weaknesses as well. In the German and Scandinavian systems the only issuers of mortgage bonds are specialized financial institutions. Creating such institutions requires development of the legal and regulatory framework necessary to govern the institutions and the bonds. In addition, to create a specialized institution is expensive in terms of the equity requirements, set-up expenses, and duplication in operating expenses (e.g., if the mortgage bank is owned by a commercial bank).

Institutions specializing in one sector may in fact be riskier than more diversified institutions. If the risks and returns across lending sectors are not highly correlated, a diversified institution may have a lower overall risk and higher expected return than a specialist institution. Real estate is a notoriously volatile sector of the economy, increasing the risk associated with institutions specializing in it. Specialist institutions may also have reduced cross-selling opportunities, although in practice they may market the products of others to their borrowers.

There is no overwhelming reason why specialized mortgage banking institutions should have such a monopoly. After all, mortgage bonds are an instrument to raise funds in capital markets. Commercial banks and other types of financial institutions can and do issue bonds secured by mortgage loans.<sup>23</sup> The essential characteristics of mortgage bond instruments — conservatively underwritten loans, homogeneous collateral, and priority rights to the collateral — can be applied to bonds issued by commercial banks as well. The main issue is the quality of credit enhancement by the issuer. The question for investors is whether a diversified commercial bank or specialized mortgage bank is a lower risk institution and therefore a better enhancer of the credit. The answer is likely to depend on the institution (e.g., its historical performance, capital-to-assets ratio) and the market.

A debate is emerging in Europe regarding whether mortgage bond issuance should be restricted to specialized institutions. In Germany, one of the largest mortgage

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<sup>23</sup> For example, low rated savings and loans in the US issued highly rated mortgage bonds during the 1970s and early 1980s, before the emergence of securitization.



banks, the Depfa, has recently argued that the privilege be extended to commercial banks as well, in essence making the point that the characteristics of the instrument are more important than those of the issuer. In the Czech Republic, the original legislation was modeled after that in Germany, but was modified to allow commercial banks to issue mortgage bonds. The French *obligations foncier* represent an interesting compromise in which transparency can be maintained for investors while allowing commercial banks and other financial institutions to issue mortgage bonds.

■ **Situation in Poland:** Legislation authorizing creation of mortgage banks and issuance of mortgage bonds was passed in 1997. This legislation, setting up a Silesian-type system (as noted), is based on German law. In 1999, a mortgage bank license was granted to BRE-Rheinhyp, but it has not started to operate. Eight additional institutions have applied for licenses — with most applicants involving joint ventures between Polish commercial and German mortgage banks.

A key question in Poland is who will invest in mortgage bonds. The institutional investor sector in Poland is quite small. Insurance companies are the likely initial investors but with assets of only 21 billion zloty they can fund only a fraction of Polish housing finance needs. Private pensions were introduced in 1999.

Even if these investors wanted to purchase mortgage bonds, they could not do so. Under current regulations mortgage bonds are not eligible investments for either insurance companies or pension funds. In the EC, mortgage bonds are eligible assets for technical reserves of insurance companies with ceilings of five to forty percent depending on the country [Chiquier, 1998]. There is no EC Directive about pension funds purchasing mortgage bonds. Some countries extend to them the ceilings applied to insurance companies or to investment funds (e.g., Czech Republic<sup>24</sup>).

The risk weighting of mortgage bonds is also a disincentive to bank investment. In Poland, mortgage bonds are currently subject to one-hundred percent risk weighting. In the EC, they are rated at twenty percent except in Denmark and Germany wherein they are rated at 10 percent.

It is unclear how investors will perceive the credit quality of mortgage bonds. As discussed in the companion paper [Merrill et al. 1999], the legal protection of the mortgage lender in Poland is incomplete and untested. Although the statutory lien priority was removed for mortgages originated by mortgage banks, the foreclosure and repossession process is largely untested. Title and lien registration exists, but its accuracy and timeliness are questionable. A conservative valuation approach is

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<sup>24</sup> Two main limits are imposed:  
- not more than 10 percent of mortgage bonds issued by one emitter;  
- not more than 20 percent of the volume of one issuance of mortgage bonds.

embedded in the legislation, but valuation techniques depend on accurate data, which do not exist for many cities in Poland.

Given the uncertainty regarding the strength of the collateral, investors may initially look more to the strength of the issuing bank for comfort regarding the credit quality of the bonds. Most of the license applicants are joint ventures between highly rated German mortgage banks and Polish commercial banks. Investors may look to the rating of the German partner for their comfort. These institutions have high ratings within Germany and thus joint ventures may be able to achieve higher ratings, and greater investor comfort, than can be achieved by Polish banks alone.

Investor yield requirements may be such that mortgage banks will not be able to compete with banks funded with deposits at much lower yields. For example, currently banks make zloty-denominated mortgage loans at rates of 16 to 18 percent. They obtain 12-month time deposits at rates of 7.5 to 12 percent. Mortgage bond yields will be a spread over government bond yields reflecting their higher perceived credit risk and lower liquidity. Medium-term (2 to 5 years) Treasury yields are 11 to 12.5 percent. A minimum spread in an uncertain environment in Poland will most likely be 2 to 3 percentage points. This suggests that a mortgage funded with a mortgage bond would generate a much lower spread than one funded with deposits (albeit with somewhat lower liquidity risk).

The mortgage banks, as they do in other countries, may offer primarily or exclusively fixed rate loans, which are unlikely to be offered in the near term by banks. The question is if and when such loans will be in demand in Poland. Near-term mortgage bank activities may be restricted to foreign currency lending — primarily for commercial real estate — as there is a small borrower base for foreign currency residential mortgages.

### ***Secondary Market Systems***

Secondary mortgage markets have emerged over the past decade as major vehicles to mobilize funds for housing in certain developed countries. In the US, secondary markets have become the dominant forms of funding for housing. In Australia and the UK, they have become a significant funding source as well. However, even though development of secondary markets has become a major policy objective for governments and private investors in many countries — progress has been slow. This reflects the on-going retail funding advantage enjoyed by depository institutions in many countries.

Secondary markets are frequently identified with mortgage-backed securitization. Mortgage pass-through securities can be issued directly by lenders or through specialized institutions, known as conduits, which purchase mortgage loans and issue mortgage securities. This is only one form of secondary market. However, lenders can



sell whole loans, among one another, to investors or conduits. Sale of loans on recourse to (or secured borrowing from) liquidity facilities is also often viewed as a form of secondary market.

A secondary mortgage market, strictly defined, is a market in which mortgages trade (i.e., one that involves the sale and purchase of the mortgage asset). The simplest and oldest version of a secondary market is the purchase and sale of whole loans among portfolio lenders. Whole loan sales exist in many countries, but they are typically not large or widespread for two reasons: credit risk assessment is costly and the heterogeneous nature of the mortgage loans makes it difficult to develop liquidity (i.e., low bid-ask spreads) in the market.

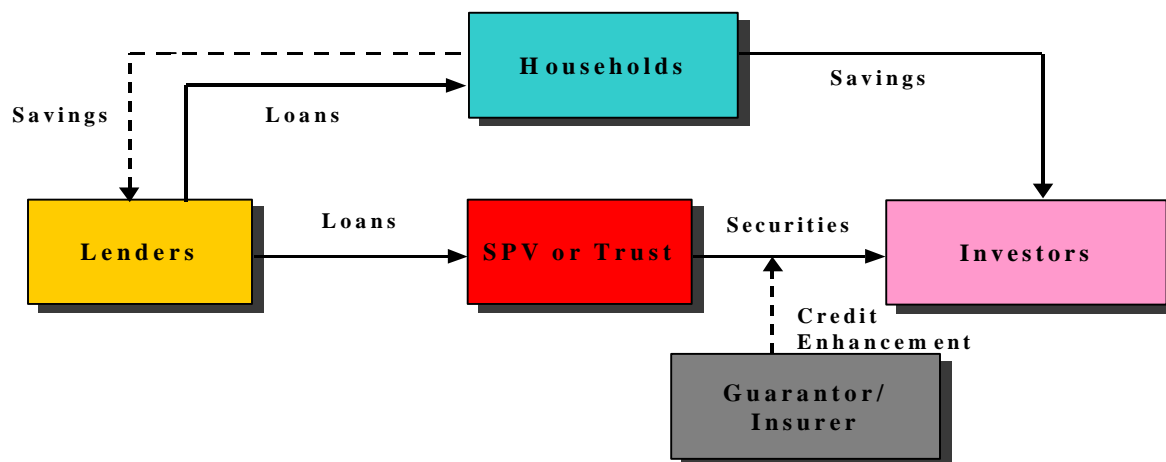
The main instruments in secondary mortgage markets are mortgage-backed securities (MBS). These are instruments backed by pools of mortgages. The simplest MBS is the pass-through security, in which investors receive pro-rata shares of the cash flows (scheduled principal, prepayments, and interest) from the mortgage pool. More complex derivative securities are frequently created from the pass-throughs. The cash flows of the loans and securities are thus matched, with the balance of the security equaling the outstanding loan balance.

A mortgage pass-through security represents a sale of the underlying loan. The issuer may sell the mortgage assets to a special purpose vehicle or trust, which then issues the securities, or to a conduit institution, which purchases mortgage loans from a number of lenders, pools the loans and issues the securities. MBS differs from mortgage bonds, which are obligations of the issuer. Simple pass-through securities are quite similar in performance to Danish mortgage bonds, as they both pass through borrower payments (scheduled and prepayments) to investors (with a delay). They differ from German mortgage bonds, which are non-amortizing bullet bonds.

The *direct sale* form of secondary market is the model used by banks to securitize portfolios of existing loans (Figure 4). They create a bankruptcy-remote special purpose vehicle (SPV) or trust. They then sell the mortgage assets to the trust, which finances the acquisition through the issuance of mortgage-backed securities. In most cases the mortgage loans and cash held temporarily are the sole assets of the trust and the securities it issues are its only liabilities. The originating lender may continue to service the loans or transfer the servicing to a third party. The transaction is treated as a sale of assets for the originating lender. Credit enhancement may be provided by a third party — e.g., a bond insurance company like MBIA or a government agency such as the Government National Mortgage Association (Ginnie Mae).

Figure 4: Secondary Market Direct Sale

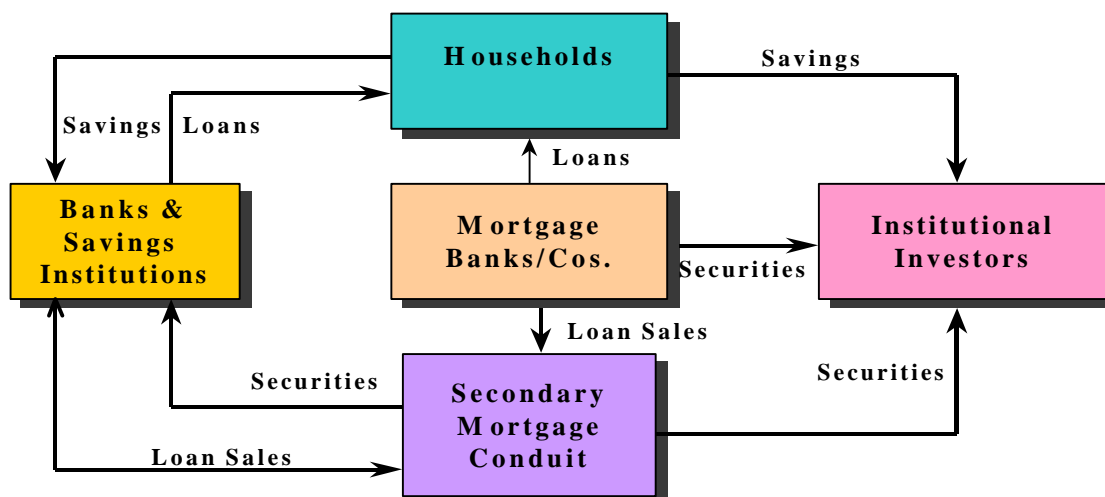
## *Secondary Market Direct Sale*



The *conduit* is an alternative secondary market model. Conduits purchase mortgages and issue MBS (Figure 5). The best known conduits in the US are Fannie Mae and Freddie Mac, both of which are government-sponsored enterprises (GSEs). There are also more than 20 private conduits with a rapidly growing share of the market.

Figure 5: Secondary Market Conduit

## *Secondary Market Conduit*





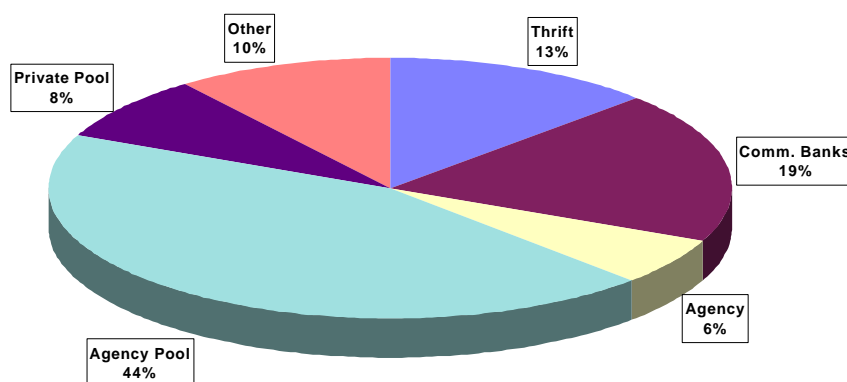
The pass-through securities issued by Fannie Mae and Freddie Mae are backed by non-government-insured mortgages. By charter both are required to have some form of credit enhancement on loans they purchase with loan-to-value ratios (LTVs) of eighty percent or more typically in the form of private mortgage insurance. Second, because they purchase a large volume of loans from a large number of lenders, they can issue larger securities with more diversified loan collateral and greater liquidity. As purchasers of the loans, they receive the cash flows and repackage them for payment to investors. Third, they provide their corporate (but not a US government) guarantee of timely payment of principal and interest on the securities. Although they are private corporations, their unique status as GSEs allows them to issue debt at yields lower than comparable issues of AAA-rated corporations but higher than comparable maturity Treasury bonds.

As noted, the secondary mortgage market is the dominant funding mechanism for housing in the US. At the end of 1997 (see figure 6), over fifty-two percent of residential one to four family loans had been securitized (agency or private pools). Fannie Mae and Freddie Mac are the largest issuers of MBS, with \$709 billion and \$579 billion, respectively. Ginnie Mae insured securities are the third largest category, with over \$536 billion outstanding.

An active private secondary mortgage market also has emerged in recent years in the US. During the 1990s, between sixteen and twenty-one percent of MBS issued per annum have been private label (other than Ginnie Mae, Fannie Mae, Freddie Mac). And the share of mortgage debt outstanding in private securitized form has been growing (from two percent in 1990 to nearly eight percent by the end of 1997, with over \$322 billion outstanding).

**Figure 6: Market Shares of US Mortgage Debt Outstanding**

1997 1-4 Family Mortgage Debt Outstanding: \$4.030 trillion  
Source: Federal Reserve

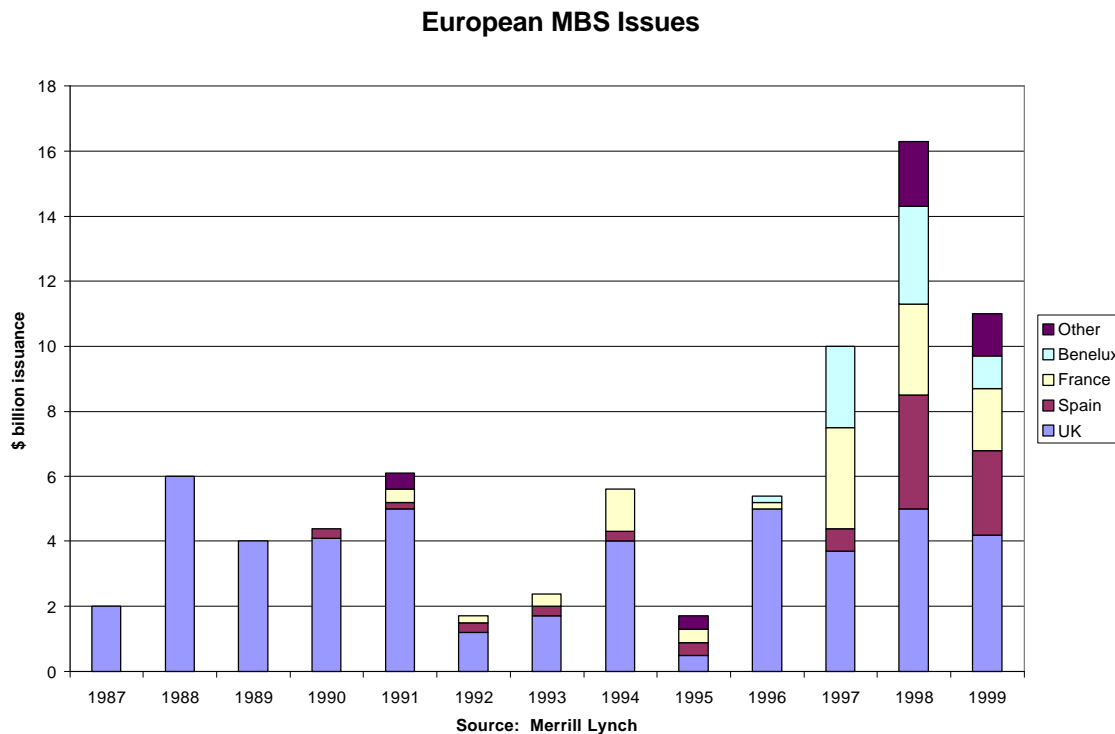


A key factor in the growth of the private MBS market has been development of the senior-subordination structure. In this structure, the senior security has priority claim on the pool cash flows. All defaults and cash flow shortfalls are borne by the subordinate tranches until (in a worst case scenario) they are gone. The rating agencies have developed models that predict the default rates on pools of mortgages based on loan characteristics (underwriting ratios, loan type), servicer performance, geographic location etc. Based on their estimates of lifetime default rates they determine the size of the subordinate tranche(s) necessary to get the desired rating.

Outside the US, secondary markets based on securitization have been started in a number of developed countries, including Australia, Canada, Hong Kong Japan, and eleven European countries. MBS volume has accelerated in the last 3 years with \$5.4 billion of issuance in 1996, \$10.1 billion in 1997, \$16.3 billion in 1998 and \$10.5 billion through August 1999. Figure 7 shows aggregate MBS issuance by country between 1987 and the first eight months of 1999.



**Figure 7 European Mortgage Security Issuance**



European securitization has been slow to take off for four reasons:

- European mortgage lenders have ample capital and have not needed to securitize for balance sheet management purposes.
- For most lenders, retail funds are still cheaper than wholesale.
- There is no government-backed agency like Fannie Mae or Ginnie Mae in the US to provide incentives for sale, standardization, and liquidity in the market.
- With infrequent issuance of non-standardized instruments there is a lack of liquidity in the market.

In Europe an interesting model combining mortgage bonds and MBS is beginning to emerge. In this model loans with LTV up to sixty percent are funded by mortgage bonds and the portion over sixty percent are funded with MBS. This technique allows the issuer to more efficiently use its capital to fund its mortgage assets.

Securitization has been even slower to develop in transforming and emerging economies.<sup>25</sup> These markets typically do not meet the three pre-requisites for securitization and secondary market development: adequate primary market infrastructure, adequate legal and regulatory infrastructure, and adequate capital market infrastructure.<sup>26</sup>

■ **Primary Market:** The starting place for discussing requirements for a successful secondary market is the primary mortgage market, and within that the mortgage instrument itself. First and foremost, mortgages must be attractive investments. The interest rates on mortgages must be market determined and provide investors with a positive, real, risk-adjusted rate of return.

The second key primary market characteristic is standardization of the mortgage instrument. There can be many types of mortgages, but only those with sufficient volume are mortgage loans. In addition, the processing costs of issuing and administering MBS and the characteristics (e.g., rate adjustment features on variable-rate loans, amortization schedule, term) of the mortgages should be uniform. In addition, standardized documentation must be available for all loans. Typical documentation includes the mortgage note describing the mortgage obligation, the deed conveying ownership to the lender as security for the repayment of the mortgage, the application, the property appraisal, and the borrower credit report.

Along with standardization of mortgage instrument and design, the underwriting of mortgages should be comprehensive and consistent. The underwriting process establishes guidelines ensuring that a borrower has the ability and the willingness to repay the debt and that the property provides sufficient security for the mortgage. Relying exclusively on the mortgage collateral value without screening the borrower's ability to repay can prove hazardous, particularly in countries where foreclosure and eviction are difficult.

The servicing of mortgages is yet another critical component of a viable secondary mortgage market. Collection of mortgage payments and periodic remittance of these payments and performance information to the investor or to the conduit are the major tasks of servicers, whether they are originators or third parties. In addition, servicers are the primary repository of information on the mortgage loans. They must maintain accurate and up-to-date information on mortgage balances, status, and history, and provide timely reports to investors.

■ **Legal and Regulatory Framework:** A well-developed legal and regulatory structure is the fundamental premise of a successful housing finance system. The

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<sup>25</sup> There has been a small volume of issuance in Latin America; Argentina, Chile and Columbia. In Asia there have been 2 MBS issued in the Philippines and over 10 issues in Hong Kong. There have been no MBS issued in Central and Eastern Europe.

<sup>26</sup> Lea, M. and L. Chiquier, [1999].



primary concern for investors is the security interest: How enforceable is the claim the investor has on the collateral in the event of default? The answer depends on clarity of land title, ability to establish priority of liens on the collateral, an effective title and lien registration system, and ability to enforce foreclosure and repossession within a reasonable time period.

Enforceable security interest, although necessary, is not a sufficient condition for a successful housing finance system. For transactions involving asset sale or pledging (i.e., as collateral), security interests must be transferable and investors must have the ability to perfect their security interest after transfer, by seizing collateral. Furthermore, the transfer of interest must be at relatively low cost. Thus, transfer and recording fees should be nominal and borrowers should not have to approve the transfer.

The regulatory environment also must be supportive. Capital requirements on mortgages and MBS must reflect the relative risks and ensure a "level playing field", i.e., one that does not favor certain institutions or instruments. Proper accounting standards (including the requirements for off-balance sheet or sale treatment) should exist to provide institutions, investors, and regulators with accurate and consistently defined information. The ability to sell assets in a tax-efficient manner, avoiding double taxation at both the trust and investor level for example, is also important. In many countries, withholding taxes on asset transfer have proved to be a formidable impediment to development of a secondary mortgage market.

■ **Capital Market:** Mortgage pass-through securities are complex instruments relative to government bonds. They pay principal and interest on a monthly basis and can be subject to uncertain amounts of prepayment and default. The more sophisticated the investors and the more developed the government bond market, the greater the likelihood of success in developing a mortgage securities market. Key questions include: Are there benchmark yields, particularly on long-term government securities, that define a "market rate" against which yields on other instruments can be compared? Are there market makers to provide liquidity? Is there a regulatory body providing oversight of security issues? Are there rating agencies that can help investors understand the characteristics of the instruments and their relative creditworthiness? In countries where bond markets are not well developed, particularly for long maturities, issuance of simple bonds by a centralized entity may be necessary to create the market. In which case, issuance of more complex mortgage pass-through securities can come at a later stage.

■ **Situation in Poland:** Many of the pre-requisites for secondary market development are not in place. There is no standardization of mortgage documentation and underwriting. The volume of loans outstanding, although growing, is still quite small and insufficient to provide enough volume to make a market in MBS securities. Even if securitization were cost effective in the current market, only PKO-BP is likely to have a sufficient volume of relatively standardized loans for securitization.

The legal system is an impediment in terms of both the time and cost to transfer a mortgage and the untested mortgage foreclosure system. The regulatory treatment of MBS would have to be established — including capital adequacy treatment, investment authority of institutional investors, and accounting standards to facilitate off-balance sheet treatment.

Perhaps more importantly, there is probably no perceived need for mortgage securitization in Poland. Bank mortgage lenders are well capitalized and mortgages still represent a small portion of total assets (except for PKO-BP). As noted in the discussion of mortgage bonds, retail funding is still significantly cheaper than wholesale funding, and thus is unlikely to be an attractive source of finance in the near future. Finally, investors would have to be educated about the securities and their likely performance — a difficult task, given the paucity of information and the lack of familiarity among domestic investors with even simple long-term government and mortgage bonds.

An alternative and somewhat simpler secondary market mechanism is the liquidity facility. Liquidity facilities exist to provide both short-term funds and capital market access to depository institutions. As such they can be viewed as either adjuncts to the portfolio lending model or an intermediate step before actual securitization through secondary markets. They operate with very low credit risk, purchasing loans on recourse or lending on an over-collateralized basis.<sup>27</sup> The mortgage collateral is a form of credit enhancement to be tapped only if the borrowing institution becomes insolvent and unable to repay the liquidity facility. Their borrowers are typically also their owners, either partially or totally [Pollock, 1994].

Liquidity facilities, as centralized bond issuers, can often obtain better access on more favorable terms than their owners/members. With a greater volume of assets they can access the markets more frequently, creating greater liquidity in their debt and negotiating better terms with underwriters. By lending to a number of institutions they can also achieve greater diversification in their asset base further they apply strict and transparent standards to mortgage loans and primary mortgage lenders, which can help to develop prudential norms and standardization in emerging mortgage markets. Liquidity facilities can reduce liquidity risk for primary market lenders by providing them with access to the capital market based on the quality of their asset portfolios. Finally, they may reduce interest rate risk by giving lenders access to longer term funds with different rate structures than they can raise on a retail basis (e.g., fixed rates). Examples of liquidity facilities include the Federal Home Loan Banks in the US and *Caisse de Refinancement de Hypothecaire* (CRH) in France.

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<sup>27</sup> An over-collateralized loan in this context has a balance outstanding that exceeds its market value. Market value, in general, represents a discounted present value adjusted for expected prepayment, volatility in property values, uncertainty regarding ability to pay, and credit enhancement.



The Mortgage Fund in Poland was a proto-type liquidity facility, obtaining funds from the World Bank, USAID, and the Polish government and refinancing dual-indexed mortgages originated by banks. It enjoyed only a modest degree of success, in part due to weak borrower and lender demand for the instrument. Consideration has been given to transforming it into a permanent, borrower-owned institution, but the new mortgage bond model has largely supplanted interest in its products. It is not likely, in any case, that the Mortgage Fund could raise competitively priced funds unless it had a government guarantee, at least in the initial stages of development.

## **Conclusions**

There is no “ideal” housing finance model in the world today. The appropriate model will depend in large part on the pre-conditions in a country; in particular the primary market conditions and legal and regulatory environment. In general, it is best to adopt models that have been tested by competition, survived adversity and have the least amount of government subsidy support. The appropriate model is one that is sustainable on economic fundamentals — not primarily on government support — as housing is too large and important of an economic sector to be funded by the government.

A robust housing finance system will display two fundamental characteristics: efficiency and stability. As defined by Diamond and Lea [1992a] an efficient housing finance system is one in which the adjusted spread, defined as the spread between mortgage and funding yields adjusted for risk, is minimized. A relatively low adjusted spread signifies a competitive system with minimal subsidy impacting the mortgage interest rate. In their 1992 research, Diamond and Lea found that the UK building society system of specialized portfolio lenders was the most efficient, followed by the US secondary market system and the Danish and German mortgage banking systems.

It is notable that in that study three different housing finance “models” achieved a relatively high degree of efficiency – specialized depository institutions in the UK, mortgage companies combined with secondary market conduits in the US and specialized mortgage banks in Denmark and Germany. The UK system (specialized portfolio lenders) was notable for its lack of government involvement. The secondary market system in the US achieved greater operational efficiency but included a degree of government intervention in the form of the implicit guarantees for GSEs. Danish and German mortgage banks were relatively efficient from an operational standpoint, but this was achieved in part due to regulatory restrictions on investors that favored mortgage bonds.

Diamond and Lea did not focus on stability as a goal of housing finance systems, although they did acknowledge its importance. The UK system owed its most efficient ranking in part to its reliance on the discretionary adjustable rate mortgage (called the standard variable rate mortgage in the UK). This instrument transfers most of the

interest rate risk inherent in mortgage lending to the consumer – a design that led to considerable instability when mortgage interest rates rose sharply in the late 1980s. The development of the US secondary market enhanced the stability of the system by providing a more effective allocation of the funding risk inherent in long term, fixed rate and fully prepayable mortgages. The German mortgage bank system achieved considerable stability but at the expense of the consumer, since interest rate risk is passed through to consumers through the preclusion of early repayment.

Despite the relative efficiency of specialized systems, outside of the US commercial banks are taking increasing market share in housing finance. The two major factors behind this trend are the relatively cheap funding available through retail deposits and the desire of lenders to cross-sell customers other financial products. As savings markets become more competitive the advantage of retail-funded lenders will disappear and with it the ability to price on an average cost basis, subsidizing some customers at the expense of others. In this environment, those institutions that can manage the risks and costs of mortgage lending (i.e., be more efficient) will prosper and grow.

What does this framework tell us about the future development of housing finance in Poland? As noted by Merrill et al, the spreads between mortgage and funding rates are still relatively wide. The wide spreads reflect both a high risk premium for mortgage lending, compensating lenders for credit and liquidity risk, and operational inefficiency. A more in-depth analysis is required to separate these factors. However, the housing finance system in Poland is notable for its relative absence of distortionary subsidies which suggests that as competition increases and risks become easier to manage (e.g., through improvements in the legal infrastructure, better information and access to longer-term funding) the efficiency will improve. It is notable that spreads have declined significantly over the past 2.5 years, a sign of growing efficiency.

This model is still in the development stage – a severe interest rate shock could engender defaults and lead many banks to exit the market. In this environment, it is important to develop funding sources from the capital markets so that borrowers and lenders can more effectively manage the risks of a volatile macroeconomic environment. Long term investors such as insurance companies and pension funds may be better suited to providing long term funds with relatively fixed interest rates which can reduce the interest rate sensitivity of borrowers and lenders.

The model the banks will follow – using variable rate loans with conservative underwriting – will reach an increasing proportion of the “bankable” portion of the population over the medium term, as interest rates stabilize at moderate levels. Longer-term fixed rate loans will facilitate a further expansion of the market.

The creation of mortgage banks will augment but most likely not supplant banks as the main housing finance model in Poland. In the short and medium term it will be



difficult for the mortgage banks to compete with the commercial banks, as their source of funds will be more expensive. As interest rates fall and become more stable, the savings market will become more competitive and bond financing will become more competitive.

The reform of the contract savings systems suggests that this model will also be a supplementary source of finance. A reform that sets subsidies at an affordable and sustainable level is important for the future development of housing finance in Poland. At its current stage of development, a heavily subsidized housing finance program would retard the growth of the private housing finance system as it has in the Czech Republic.

In summary, if current progress towards macroeconomic stability is maintained, the future for housing finance in Poland is bright. As borrowers and lenders become more confident about their ability to manage the cost and risk of housing finance, the system should grow faster than the rate of growth in the economy. The current system is competitive and free of major distortions suggesting that efficiency should improve over time. Development of longer term funding sources will enhance the stability of the system and set the stage for integration into the broader European financial system early in the new millennium.

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